

PATENT
Attorney Docket No. 49925.830001.US0

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of)
Baxter, Bradley James)
Serial No. 10/709,743) Group Art Unit: 3616
Filed: May 26, 2004) Examiner: King, Bradley T.
For: DEFORMATION ELEMENT)
FOR A VEHICLE)
DASHBOARD)

SUPPLEMENTAL APPEAL BRIEF IN RESPONSE TO
FEBRUARY 25, 2009, NOTICE OF NON-COMPLIANT APPEAL BRIEF

Honorable Commissioner of Patents and Trademarks
Alexandria, VA 22313

Sir:

This is an appeal from the decision of the Examiner mailed on May 23, 2007 finally rejecting claims 1-30. In response to the notice of non-compliant appeal brief, the appellant has updated the claim appendix to include a copy of the claims on appeal.

REAL PARTY IN INTEREST

The real party in interest in this appeal is Intensa, Inc., as evidenced by an Assignment filed at Reel 014773, Frame 0356.

RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences that are related to this case.

STATUS OF THE CLAIMS

Claims 1-30 remain in this application.

This appeal is taken from the final rejection of claims 1-30.

No claims are allowed.

STATUS OF AMENDMENTS

An Amendment and Response was filed on February 27, 2007 in response to a December 1, 2006 Office Action. The Examiner submitted a Final Office Action on May 23, 2007. No amendment has been filed subsequent to the Final Office Action mailed on May 23, 2007.

SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 is an independent claim, from which claims 2-11 ultimately depend. The preamble of claim 1 is directed to an energy absorbing structure 20. Claim 1 requires the energy absorbing structure to include a first deformation member 48, having a curved shape with at least first and second opposing radii of curvature in the direction of a deformation axis (Z) forming a generally "S" shape. (Page 2, lines 21-24; page 5, lines 17-20; Figure 4) Claim 1 further requires a second deformation member 52, interconnected with the first deformation member, such that the first deformation member 48 and second deformation member 52 intersect to define at least a first deformation cavity 32 and a second deformation cavity 36 between the deformation members, at least one of the deformation cavities operable to close during application of a load in the direction of the deformation axis (Z). (Page 7, lines 3-5 and 21-23; Figure 4)

Claim 1 does not include any means-plus-function limitations pursuant to 35 U.S.C. § 112(6). Dependent claims 2-11, likewise, do not contain any means-plus-function limitations pursuant to 35 U.S.C. § 112(6).

Claim 12 is an independent claim, from which claims 13-19 ultimately depend. The preamble of claim 12 recites a deformation structure 20 for use in a motor vehicle. Claim 12 requires the limitation of a first deformation member 48, having a generally "S" shape. (Page 2, lines 21-24; page 5, lines 17-20; Figure 4) Claim 12 also requires a second deformation member 52. (Page 5, lines 17-20; Figure 4) The first deformation member 48 and second deformation member 52 are interconnected, such that an intersection of the members creates a first deformation cavity 32 and a second deformation

cavity 36 arranged along a deformation axis (Z). (Page 7, lines 3-5 and 21-23; Figure 4) The deformation cavities 32 and 36 are operable to collapse during energy absorption along the deformation axis (Z). (Page 7, lines 3-5 and 21-23; Figure 4)

Claim 12 does not include any means-plus-function limitations pursuant to 35 U.S.C. § 112(6). Dependent claims 13-19, likewise, do not contain any means-plus-function limitations pursuant to 35 U.S.C. § 112(6).

Claim 20 is an independent claim from which claims 21-25 ultimately depend. The preamble of claim 20 recites a deformation structure 20 for use in a motor vehicle. (Page 5, lines 14-21). Claim 20 requires the limitation of at least two deformation cavities 32 and 36, having diamond-shaped cross sections formed by the intersection of two opposing deformation members 28, 52, the deformation members having substantially identical "S" shapes. (Page 2, lines 21-24; page 7, lines 3-8; Figure 4)

Claim 20 does not include any means-plus-function limitations pursuant to 35 U.S.C. § 112(6). Dependent claims 21-25, likewise, do not contain any means-plus-function limitations pursuant to 35 U.S.C. § 112(6).

Claim 26 is an independent claim, from which claims 27-30 ultimately depend. The preamble of claim 26 recites a deformation structure 20 for use in a motor vehicle. (Page 5, lines 14-21). Claim 26 requires the limitation of a first deformation member 48 having a curved shape with at least first and second opposing radii of curvature in the direction of a deformation axis (Z) forming a generally "S" shape. (Page 2, lines 21-24; page 7, lines 3-8; Figure 4) Claim 26 further requires a second deformation member 52 having a substantially identical shape as said first deformation member. (Page 2, lines 21-24; page 7, lines 3-8; Figure 4)

Finally, claim 26 recites a means "for interlocking said first and second deformation members to create at least first and second deformation cavities",

which is a means-plus-function limitation pursuant to 35 U.S.C. § 112(6). Insufficient structure is disclosed within the limitation for performing the recited function of interlocking the first and second deformation members to create at least first and second deformation cavities. Accordingly, the limitation must be construed under 35 U.S.C. § 112(6). Appellant's specification, at page 5, lines 20-31, page 6, lines 1-4, identifies a number of embodiments that define the means as:

[e]ach of the first and second deformation members 48, 52 has several engagement slots 56 which extend approximately half of the width of the deformation members 48, 52. When the deformation members 48, 52 are arranged such that the curves oppose one another, the engagement slots 56 may be aligned, as illustrated in Fig. 2. The first deformation member 48 and second deformation member 52 may be slidably engaged such that the engagement slots 56 engage with one another and the deformation members 48, 52 form the deformation element 20. When the first and second deformation members 48, 52 are engaged, they substantially completely overlap to form the deformation element. In one embodiment, the deformation members 48, 52 are secured after engagement with a spot weld, crimp, or clip to help ensure that the deformation members 48, 52 remain connected during shipment of the deformation element, or in the case where attachment methods in the vehicle do not fix in place both deformation members. Additionally, in an embodiment, the engagement slots 56 are positioned such that one of the deformation members 48, 52 must be slightly compressed in order to slidably engage the other deformation member, thus creating tension or compression forces between the members which may be desirable in order to keep the members from easily sliding apart.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. The Examiner rejected claims 1-30 under 35 U.S.C. § 112, first paragraph. Specifically, the Examiner states that the patent application does not support the recitation of a generally S-shape.

B. The Examiner rejected Claims 1, 2, 5, 6, 10-12, 15, 16, 20, 22, 26, and 28-30 under 35 U.S.C. § 102(b) as being anticipated by United States Patent 6,170,872 ("Bair et al.")

C. The Examiner rejected Claims 12-15, 20, and 21 under 35 U.S.C. § 102(b) as being anticipated by international patent application publication number WO 93/23626 ("Pomero").

D. The Examiner rejected Claims 7-9, 17-19, and 23-25 under 35 U.S.C. § 103(a) as being unpatentable and obvious over Bair et al. in view of United States Patent 5,951,045 ("Almefelt et al.").

E. The Examiner rejected Claims 3, 4, 13, 14, 21, and 27 under 35 U.S.C. § 103(a) as being unpatentable over Bair et al. in view of Pomero.

ARGUMENT

A. Claims 1-30 are patentable under 35 U.S.C. § 112, second paragraph.

The Examiner rejected claims 1-30 under 35 U.S.C. § 112, second paragraph, alleging that the patent application does not support the recitation of a generally S-shape.

The original claims recited "a first deformation member having a curved shape with at least first and second opposing radii of curvature in the direction of a deformation axis," which is the very definition of an S shape. Paragraph 22 of the specification defines the deformation members as "double

curved members.” Paragraph 23 describes the “S” shape precisely. A first deformation member 48 is shaped to have an upper lever arm 56 that joins an upper curve 60, which joins an upper middle lever arm 64. The lower middle lever arm 66 joins lower curve 72, which joins lower lever arm 76. Figure 3 clearly shows the “S” shaped deformation member described by the specification. Accordingly, the specification and figures clearly support the recitation of the deformation element being “S” shaped and the rejection under 35 U.S.C. § 112, first paragraph, is believed to be in error as no new matter was added by the amendment.

The Examiner argues that the appellant has described the “invention” as being diamond-shaped. The Examiner has confused the deformation cavities 32 and 36 with the S-shaped deformation member 48. To be sure, the specification only describes the deformation cavities as being diamond-shaped. (Page 7, lines 6-8; page 11, lines 3,4; claim 20). Accordingly, the Examiner’s rejections of claims 1-30 should be reversed.

B. Claims 1, 2, 5, 6, 10-12, 15, 16, 20, 22, 26, and 28-30 are patentable under 35 U.S.C. § 102(b) over the Bair et al. reference.

The Examiner rejected Claims 1, 2, 5, 6, 10-12, 15, 16, 20, 22, 26, and 28-30 under 35 U.S.C. § 102(b) as being anticipated by the Bair et al. reference.

Claims 1, 12, 20 and 26 each include the limitation that a first deformation member be provided having a generally “S” shape. The Bair et al. reference shows a deformation element comprising two “C” shaped elements connected to form a cavity. This stands in stark contrast to the claimed structure, which includes a first deformation element, having first and second opposing radii of curvature in the direction of a deformation axis forming a generally “S” shape, and a second deformation member that, when interconnected with the first deformation member, defines at least first and second deformation cavities. The Bair et al. reference does not set forth at least these elements and recitations. The Examiner’s suggestion that two of

the "C" shaped members from the Bair et al. device "form an S shape when taken together" is improper as it redefines the prior art using the applicant's disclosure.

Anticipation under 35 U.S.C. § 102 focuses on the questions of whether or not a claim reads on the product or process disclosed by a prior art reference, not what the reference broadly "teaches." Kalman v. Kimberly-Clarke Corp., 713 F.2d 760 (Fed. Cir. 1983). "For a prior art reference to anticipate in terms of 35 U.S.C. § 102, every element of the claimed function must be identically shown in a single reference." Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675 (Fed. Cir. 1988); Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference). The differences between the device of the Bair et al. reference and appellant's claimed device are substantial and significant, as described herein. Accordingly, claims 1, 12, 20 and 26 are believed to be patentably distinct from the prior art. Claims 2, 5, 6, 10 and 11 each ultimately depend from claim 1; claims 15 and 16 ultimately depend from claim 12; claim 22 depends from claim 20 and claims 28, 29 and 30 ultimately depend from claim 26. Accordingly, the aforementioned dependent claims are believed to be allowable for at least the reasons set forth herein with respect to claims 1, 12, 20 and 26. As such, the Examiner's rejections should be reversed.

C. Claims 12-15, 20, and 21 are patentable under 35 U.S.C. § 102(b) over the Pomero reference.

The Examiner rejected Claims 12-15, 20, and 21 under 35 U.S.C. § 102(b) as being anticipated by the Pomero reference.

Claims 12 and 20 each include the limitation that a first deformation member be provided having a generally "S" shape. Pomero provides circular deformation elements, which are similar to the "C" shaped elements

associated with Bair et al. In no manner can the individual elements of Pomero be interpreted as being S-shaped. Accordingly, Pomero is clearly distinguishable for the reasons set forth above with respect to Bair et al.

Pomero fails to teach a first deformation element, having first and second opposing radii of curvature in the direction of a deformation axis forming a generally "S" shape, and a second deformation member that, when interconnected with the first deformation member, defines at least first and second deformation cavities. The Examiner's argument that the "8" shape exhibited by the Pomero device "is two superimposed S's is improper as it redefines the prior art using the applicant's disclosure.

Pomero cannot anticipate claims 12 or 20 under 35 U.S.C. § 102(b). Claims 13, 14 and 15 ultimately depend from claim 12 and claim 21 depends from claim 20. Accordingly, the aforementioned dependent claims are believed to be allowable for at least the reasons set forth herein with respect to claims 12 and 20. As such, the Examiner's rejections should be reversed.

D. Claims 7-9, 17-19, and 23-25 are patentable under 35 U.S.C. § 103(a) over Bair et al. in view of the Almefelt et al. reference.

The Examiner rejected claims 7-9, 17-19, and 23-25 under 35 U.S.C. § 103(a) as being unpatentable and obvious over Bair et al. in view of the Almefelt et al. reference. Claims 7, 8 and 9 each ultimately depend from claim 1. Claims 17, 18 and 19 each ultimately depend from claim 12. Claims 23, 24 and 25 each ultimately depend from claim 20. Claims 1, 12 and 20 each include the limitation that a first deformation member be provided having a generally "S" shape. As discussed in greater detail hereinabove, Bair et al. reference fails to teach or otherwise disclose this structural limitation. The Almefelt et al. reference does not cure the deficiencies of the Bair et al. reference, as it does not teach the use of S-shaped deformation members. As such, the cited prior art fails to support an obviousness-type rejection of claims 7-9, 17-19, and 23-25.

The Examiner is not considering the claimed invention or the prior art as a whole. In determining the difference between the prior art and the claims, the question under 35 U.S.C. § 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983). A prior art reference and the claimed invention must be considered in their entireties. Distilling an invention down to the "jist" or "thrust" of an invention disregards the requirement of analyzing the subject matter "as a whole." W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *Cert. denied*, 469 U.S. 851 (1984). An energy absorbing structure comprising a first deformation element, having first and second opposing radii of curvature in the direction of a deformation axis forming a generally "S" shape, and a second deformation member that, when interconnected with the first deformation member, defines at least first and second deformation cavities is clearly unique to the art. Accordingly, the Examiner's rejections must be reversed.

E. Claims 3, 4, 13, 14, 21, and 27 are patentable under 35 U.S.C. § 103(a) Bair et al. in view of the Pomero reference.

The Examiner rejected claims 3, 4, 13, 14, 21, and 27 under 35 U.S.C. § 103(a) as being unpatentable over Bair et al. in view of Pomero. Claims 3 and 4 each ultimately depend from claim 1. Claims 13 and 14 each ultimately depend from claim 12. Claim 21 depends from claim 20. Claim 27 depends from claim 26. Claims 1, 12, 20 and 26 each include the limitation that a first deformation member be provided having a generally "S" shape. As discussed in greater detail hereinabove, Bair et al. fails to teach or otherwise disclose this structural limitation. The Pomero reference does not cure the deficiencies of the Bair et al. reference, as it does not teach the use of S-shaped deformation members. As such, the cited prior art fails to support an

obviousness-type rejection of claims 3, 4, 13, 14, 21, and 27. Accordingly, the Examiner's rejections must be reversed.

Request:

Reversal of the Examiner's final rejection of claims 1-30 under 35 U.S.C. § 112, second paragraph; the Examiner's final rejection of claims 1, 2, 5, 6, 10-12, 15, 16, 20, 22, 26, and 28-30 under 35 U.S.C. § 102(b) over the Bair et al. reference; the Examiner's final rejection of claims 12-15, 20, and 21 under 35 U.S.C. § 102(b) over the Pomero reference; the Examiner's final rejection of claims 7-9, 17-19, and 23-25 under 35 U.S.C. § 103(a) over Bair et al. in view of the Almefelt et al. reference; and the Examiner's final rejection of claims 3, 4, 13, 14, 21, and 27 under 35 U.S.C. § 103(a) over Bair et al. in view of Pomero is respectfully requested for the above-stated reasons.

Signed this 10th day of March, 2009.

Respectfully submitted,



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CLAIMS APPENDIX

The Claims involved in this Appeal read as follows:

1. An energy absorbing structure, comprising:

a first deformation member having a curved shape with at least first and second opposing radii of curvature in the direction of a deformation axis forming a generally "S" shape; and

a second deformation member interconnected with said first deformation member such that said first and second deformation members intersect to define at least first and second deformation cavities between said deformation members, at least one of said deformation cavities operable to close during application of a load in the direction of said deformation axis.

2. The energy absorbing structure, as claimed in claim 1, wherein said first and second deformation members have a substantially identical shape.

3. The energy absorbing structure, as claimed in claim 1, wherein said first and second deformation members include a plurality of engagement slots, and wherein said engagement slots of said first deformation member slidably engage with said engagement slots of said second deformation member.

4. The energy absorbing structure, as claimed in claim 3, wherein said engagement slots are arranged to allow said first and second deformation members to substantially completely overlap.

5. The energy absorbing structure, as claimed in claim 1, wherein said first deformation cavity is operable to close upon the application of a first load in the direction of the deformation axis, and said first and second deformation cavities are operable to close upon the application of a second load in the direction of the deformation axis, wherein the second load is greater than the first load.

6. The energy absorbing structure, as claimed in claim 1, wherein said first and second deformation cavities are operable to close concurrently upon the application of a load.

7. The energy absorbing structure, as claimed in claim 1, wherein said first and second deformation members include a first flange along said first radius of curvature and a second flange along said second radius of curvature.

8. The energy absorbing structure, as claimed in claim 7, wherein a height of said first flange is greater than a height of said second flange.

9. The energy absorbing structure, as claimed in claim 8, wherein the height of said first and second flanges is selected based on load requirements for said deformation element.

10. The energy absorbing structure, as claimed in claim 1, wherein said first radius of curvature is greater than said second radius of curvature.

11. The energy absorbing structure, as claimed in claim 1, wherein said first radius of curvature is substantially equal to said second radius of curvature.

12. A deformation structure for use in a motor vehicle, comprising:

a first deformation member having a substantially "S" shape; and

a second deformation member,

wherein said first and second deformation members are interconnected such that an intersection of the members creates first and second deformation cavities arranged along a deformation axis, said deformation cavities operable to collapse during energy absorption along said deformation axis.

13. The deformation structure for use in a motor vehicle, as claimed in claim 12, wherein said first and second deformation members include a plurality of engagement slots, and wherein said engagement slots of said first deformation member slidably engage with said engagement slots of said second deformation member.

14. The deformation structure for use in a motor vehicle, as claimed in claim 13, wherein said engagement slots are arranged to allow said first and second deformation members to substantially completely overlap.

15. The deformation structure for use in a motor vehicle, as claimed in claim 12, wherein the shape of said first and second deformation members is substantially identical.

16. The deformation structure for use in a motor vehicle, as claimed in claim 12, wherein said first deformation cavity is operable to close upon the application of a first load in the direction of the deformation axis, and said first and second deformation cavities are operable to close upon the application of a second load in the direction of the deformation axis, wherein the second load is greater than the first load.

17. The deformation structure for use in a motor vehicle, as claimed in claim 12, wherein said first and second deformation members include a first flange along a first curve and a second flange along a second curve.

18. The deformation structure for use in a motor vehicle, as claimed in claim 17, wherein a height of said first flange is greater than a height of said second flange.

19. The deformation structure for use in a motor vehicle, as claimed in claim 18, wherein the height of said first and second flanges is selected based on load requirements for said deformation element.

20. A deformation structure for use in a motor vehicle, comprising:

at least two deformation cavities having diamond-shaped cross sections formed by the intersection of two opposing deformation members, the deformation members having substantially identical "S" shapes.

21. The deformation structure for use in a motor vehicle, as claimed in claim 20, wherein said two opposing deformation members include a plurality of engagement slots, and wherein said deformation member slidably engage with said engagement slots allowing said deformation members to substantially completely overlap.

22. The deformation structure for use in a motor vehicle, as claimed in claim 20, wherein said deformation structure includes a first deformation cavity and a second deformation cavity, and wherein said first deformation cavity is operable to close upon the application of a first load in the direction of a deformation axis, and said second

deformation cavity is operable to close upon the application of a second load in the direction of the deformation axis, wherein the second load is greater than the first load.

23. The deformation structure for use in a motor vehicle, as claimed in claim 20, wherein said deformation members include at least first and second flanges arranged along a perimeter of said deformation cavities.

24. The deformation structure for use in a motor vehicle, as claimed in claim 23, wherein a height of said first flange is greater than a height of said second flange.

25. The deformation structure for use in a motor vehicle, as claimed in claim 24, wherein the height of said first and second flanges is selected based on load requirements for said deformation structure.

26. A deformation structure for use in a motor vehicle, comprising:

a first deformation member having a curved shape with at least first and second opposing radii of curvature in the direction of a deformation axis forming a substantially "S" shape;

a second deformation member having a substantially identical shape as said first deformation member; and

means for interlocking said first and second deformation members to create at least first and second deformation cavities.

27. The deformation structure for use in a motor vehicle, as claimed in claim 26, wherein said means for interlocking include a plurality of engagement slots.

28. The deformation structure for use in a motor vehicle, as claimed in claim 26, wherein said first deformation cavity is larger than said second deformation cavity.

29. The deformation structure for use in a motor vehicle, as claimed in claim 26, wherein said first radius of curvature is greater than said second radius of curvature.

30. The deformation structure for use in a motor vehicle, as claimed in claim 26, wherein said first radius of curvature is substantially equal to said second radius of curvature.

EVIDENCE APPENDIX

Not applicable.

RELATED PROCEEDINGS APPENDIX

Not applicable.